

Application No. 09/844,251
Filed: April 27, 2001
TC Art Unit:2832
Confirmation No.:8919

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A process for preparing a contact on a microswitch, the process reducing a resistance of the microswitch and maintaining a low resistance of the microswitch for many cycles, comprising:
 - a. forming the microswitch contact with a predetermined material;
 - b. ~~temporarily~~ exposing the microswitch contact for a set period of time to a fluid ~~under predetermined conditions to being~~ reactive with the contact material to lower a contact resistance.
2. (Previously Presented) The process of claim 1 wherein the microswitch is a microrelay.
3. (Previously Presented) The process of claim 1 wherein the material used to form the contact is selected from the group consisting of gold, ruthenium, rhodium and combinations thereof.
4. (Previously Presented) The process of claim 3 wherein the material is ruthenium.

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5. (Previously Presented) The process of claim 1 wherein the microswitch is fabricated using the process outlined in Figure 3.

6. (Withdrawn) The process of claim 1 wherein said fluid for preparing said microswitch comprises materials selected from the group consisting of acids, bases, peroxides and mixtures thereof.

7. (Withdrawn) The process of claim 6 wherein said materials are diluted with water.

8. (Withdrawn) The process of claim 6 wherein said materials are selected from the group consisting of sulfuric acid, hydrochloric acid, ammonium hydroxide, hydrogen peroxide, and mixtures thereof, said materials being optionally diluted with water.

9. (Withdrawn) The process of claim 6 wherein said contacts are exposed to said materials for approximately 5 - 30 minutes.

10. (Withdrawn) The process of claim 9 wherein said exposure is for approximately 20 minutes.

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11. (Withdrawn) The process of claim 9 wherein said preparation additionally includes a step of releasing said die from a mold by use of a process comprising (1) exposing said die and mold to concentrated, semiconductor grade hydrogen peroxide for approximately 5-20 minutes), (2) rinsing said die with deionized water for approximately 5-20 minutes, (3) exposing said die to a 25% solution of concentrated, semiconductor grade nitric acid, 75 % deionized water (vol/vol), at from room temperature to 60C for approximately 30-90 minutes, (4) rinsing said die with deionized water for approximately 5-20 minutes, (5) exposing said die and mold to concentrated, semiconductor grade hydrogen peroxide for approximately 5-20 minutes, (6) rinsing said die with deionized water for approximately 5-20 minutes, and (7) drying said released microswitch with N₂ gas.

12. (Previously Presented) The process of claim 1 wherein the fluid comprises materials selected from the group consisting of oxygen, carbon tetrafluoride, sulfur hexafluoride or other fluorine-containing gases, argon and mixtures thereof.

13. (Previously Presented) The process of claim 12 wherein the material is a gaseous plasma.

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14. (Previously Presented) The process of claim 13 wherein the plasma is Inductively Coupled Plasma.

15. (Previously Presented) A process for preparing a contact on a microswitch wherein the contact formation includes Ru, comprising temporarily exposing the contact to an oxygen plasma to reduce contact resistance.

16. (Previously Presented) A microswitch contact formed according to the process of claim 1.

17. (Previously Presented) A microswitch formed according to the process of claim 1.

18. (Previously Presented) A microswitch formed according to the process of claim 5.

19. (Previously Presented) A microswitch formed on a semiconductor die with an active region, wherein the microswitch is formed according to the process of claim 1.

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20. (Previously Presented) A semiconductor package having a semiconductor die connected to external pins, the die including an active area;

a microswitch formed on a surface of the die, wherein the microswitch is formed according to the process of claim 1.

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